

# CELL AND TISSUE KINETICS

Edited by Christopher S. Potten and  
Zbigniew Darzynkiewicz

Vol. 21, 1988

## *Editorial Board*

M. Alison, D. Allison, I. L. Cameron,  
P. Dörmer, P. Galand, J. Gray, M. Greenberg,  
N. Hartmann, O. H. Iversen, J. R. Jeter, B. F. Johnson,  
B. Lord, A. M. Mastro, M. P. Moyer, K. Norrby, E. Olah,  
S. Rockwell, T. Rytömaa, L. Simpson-Herren, P. Skehan,  
A. White

**Blackwell Scientific Publications**  
*Oxford London Edinburgh Boston Melbourne*

Published by  
Blackwell Scientific Publications Ltd,  
Osney Mead, Oxford OX2 0EL

# CONTENTS

iii

## VOL. 21, NO. 1, JANUARY 1988

EDITORIAL	1
E. MCI. TUDOR, J. L. HOPPER AND M. C. HANNAH. An autoradiographic study of the developing parietal cell population in neonatal pigs	3
S. KIKUYAMA, T. KUBOTA, M. WATANABE, K. ISHIBIKI AND O. ABE. Cell kinetic study of human carcinomas using bromodeoxyuridine	15
A. OKUDA AND G. KIMURA. Commitment to ploidy conversion of 3Y1 cells during metaphase arrest by colcemid	21
K. SERVOMAA AND T. RYTÖMAA. Suicidal death of rat chloroleukaemia cells by activation of the long interspersed repetitive DNA element ( <i>LIRn</i> )	33
C. E. SARRAF AND I. D. BOWEN. Proportions of mitotic and apoptotic cells in a range of untreated experimental tumours	45
Proceedings of the Cell Kinetics Society Twelfth Annual Meeting	51

## VOL. 21, NO. 2, MARCH 1988

V. ZNOJIL AND E. NEČAS. The spleen colony technique. I. Correction for the overlap effect and sources of error in CFU-s determination	65
E. NEČAS AND V. ZNOJIL. Non-circadian rhythm in proliferation of haematopoietic stem cells	73
F. HAUSER AND E. NEČAS. Simulation of CFU-s kinetics after irradiation	81
J. C. ANGELLO. A kinetic method to determine the cell cycle times of chick skin fibroblast subpopulations	91
A. L. BOOTSMA AND J. A. G. DAVIDS. The cell cycle of spermatogonial colony forming stem cells in the CBA mouse after neutron irradiation	105
D. S. STRAUS. Growth of IM-9 human lymphoblasts in serum-free medium: stimulation by glucocorticoids	115
R. SILVESTRI, A. COSTA, S. VENERONI, G. DEL BINO AND P. PERSICI. Comparative analysis of different approaches to investigate cell kinetics	123
A. BYBEE AND A. R. TUFFERY. The short-term effects of a single injection of isoproterenol on proliferation in the submandibular gland, parotid gland and oesophagus <i>in vivo</i>	133

## VOL. 21, NO. 3, MAY 1988

V. ZNOJIL AND E. NEČAS. The spleen colony technique. II. Errors in estimation of the fraction of CFU-s synthesizing DNA	143
V. ZNOJIL AND E. NEČAS. The spleen colony technique. III. Comparison of the overlap effect and of errors in CFU-s determination and the [ <sup>3</sup> H]-thymidine suicide data for several strains of mice	149

W. R. BROWN, R. D. FURUKAWA AND C. A. RAMSAY. Circadian rhythms are suppressed in hyperproliferative mouse epidermis	159
Z. DARZYNKIEWICZ, S. P. CARTER, S. M. MIKULSKI, W. J. ARDELT AND K. SHOGEN. Cytostatic and cytotoxic effects of Pannon (P-30 Protein), a novel anticancer agent	169
J. S. THOMPSON, S. K. SAXENA AND J. G. SHARP. Effect of urogastrone on intestinal regeneration is dose-dependent	183
C. P. SIGDESTAD, W. GUILFORD, J. PERRIN AND D. J. GRDINA. Cell cycle redistribution of cultured cells after treatment with chemical radiation protectors	193
C. TEJERO, J. H. HENDRY AND N. G. TESTA. Persistent dose-dependent increases in cycling of haemopoietic precursor cells after irradiation	201
The Twelfth Biennial Conference of the International Cell Cycle Society	205

## VOL. 21, NO. 4, JULY 1988

S. ZUCOLOTO, J. A. DIAZ, J. S. M. OLIVEIRA, G. MUCCILO, V. N. SALES NETO AND J. K. KAJIWARA. Effect of chemical ablation of myenteric neurones on intestinal cell proliferation	213
T. C. CIPRIANO, S. ZUCOLOTO, G. MUCCILO AND J. K. KAJIWARA. Acute and subacute effects of thiamine deficiency on the morphometry and cell kinetics of jejunal and ileal epithelial cells	221
J. J. RIJZEWIJK, J. B. M. BOEZEMAN AND F. W. BAUER. Synchronized growth in human epidermis following tape-stripping: its implication for cell kinetic studies	227
C. S. POTTEN, S. A. ROBERTS, S. CHWALINSKI, M. LOEFFLER AND U. PAULUS. Scoring mitotic activity in longitudinal sections of crypts of the small intestine	231
M. LOEFFLER, C. S. POTTEN, U. PAULUS, J. GLATZER AND S. CHWALINSKI. Intestinal crypt proliferation. II. Computer modelling of mitotic index data provides further evidence for lateral and vertical cell migration in the absence of mitotic activity	247
P. E. BUDTZ. Epidermal tissue homeostasis. III. Effect of hydrocortisone on cell pool size, cell birth rate and cell loss in normal toads and in toads deprived of the pars distalis of the pituitary gland	259
B. MAURER-SCHULTZE, U. KONDZIELLA AND M. BÖSWALD. Tumour cell recruitment of the JB-1 and L 1210 ascites tumour determined directly by double labelling with [ $^{14}\text{C}$ ] and [ $^3\text{H}$ ]thymidine	271
C. SPACH AND R. MOTTA. Mathematical analysis of haemopoietic grafted cell renewal and migration through the allogeneic or syngeneic mouse host	285
E. THORUD, O. P. F. CLAUSEN AND E. AARNÆS. Turnover and maturation kinetics in the hairless mouse epidermis. Continuous [ $^3\text{H}$ ]TdR labelling and mathematical model analyses	301
Book review	315

# CONTENTS

v

## VOL. 21, NO. 5, SEPTEMBER 1988

S. CHWALINSKI, C. S. POTTEN AND G. EVANS. Double labelling with bromodeoxyuridine and [ <sup>3</sup> H]-thymidine of proliferative cells in small intestinal epithelium in steady state and after irradiation	317
J. E. O'CONNOR, B. F. KIMLER AND J. L. VARGAS. Flow cytometric analysis of the effects of high protein diet on isolated rat liver mitochondria	331
C. R. KING, R. NATH AND S. ROCKWELL. Effects of continuous low dose-rate irradiation: computer simulations	339
W. S. F. WONG, G. J. MANN AND M. H. N. TATTERSALL. Identification of 'non-proliferating' B16 melanoma cells using monoclonal antibody (AD203) against the M1 subunit of ribonucleotide reductase	353
G. E. R. SCHOETERS, L. DE SAINT-GEORGES, R. VAN DEN HEUVEL AND O. VANDERBORGHT. Mineralization of adult mouse bone marrow <i>in vitro</i>	363
Letters to the Editor	375
Book review	379

## VOL. 21, NO. 6, NOVEMBER 1988

R. C. QUACKENBUSH AND A. F. SHIELDS. Local re-utilization of thymidine in normal mouse tissues as measured with iododeoxyuridine	381
E. HAASKJOLD, S. B. REFSUM, R. BJERKNES AND T. O. PAULSEN. The labelling index is not always reliable. Discrepancies between the labelling index and the mitotic rate in the rat corneal epithelium after intraperitoneal and topical administration of tritiated thymidine and colcemid	389
R. ROWLEY AND M. J. EGGER. Method for probing cells in radiation-induced G <sub>2</sub> arrest: demonstration of potentially lethal damage repair	395
G. UCCI, A. RICCARDI, P. DÖRMER, M. DANOVA AND R. LUONI. Early plasma cell recruitment in multiple myeloma following chemotherapy	405
P. BRÜHL, H.-G. MERGENTHALER AND P. DÖRMER. Haemopoietic inductive capacity of irradiated stromal cell layers in human micro long-term bone marrow cultures	411
W. CHEN, H. P. MEINZER AND B. SANDBLAD. The growth and life of a monoclonal crypt	419
H. P. MEINZER, W. CHEN, B. SANDBLAD AND N. WRIGHT. The cell cycle time in intestinal crypts by simulation of FLM experiments	429
Book review	437
Author Index to Volume 21	439